Applicants respectfully traverse this rejection.

Two of the references cited by the Examiner appear to have little relevance to the claims presently pending in the application. The patent by Petell, *et al.*, describes monoclonal antibodies that bind to apical membrane proteins found on insect cells and to the use of these antibodies for the protection of plants from the insects. Depeptidyl peptidase IV is one of the apical membrane proteins that may be targeted by the antibodies. However, there is no indication that any of the proteins disclosed therein may be used in an intranasal drug composition. The patent does suggest that certain preparations may be sprayed onto plants, but this is clearly unrelated to the type of spray that would be used for intranasal drug administration. Applicants submit that this reference cannot be reasonably be used either alone or in combination to reject the therapeutic packages now claimed.

The second reference that appears to have little relevance is the patent by Robison. This identifies allegedly new proteins that share sequence homology with a number of different protease families. However, there is no indication that these proteins are actually, themselves, dipeptidyl proteases. In discussing the delivery of the newly discovered proteins as therapeutic agents, the patent lists essentially every route of delivery that can be used for a drug but there is no indication that one particular route is preferred over another. It therefore unclear how this reference could provide an incentive to make an intranasal composition of the sort required by Applicants' claims. Applicants therefore respectfully submit that Robison cannot be validly used to reject claims on obviousness grounds.

The last two references cited by the Examiner are more relevant than the ones discussed above in that both do, in fact, disclose drug compositions containing dipeptidyl peptidase IV. The reference by Houston suggests that compositions containing this peptidase may be used in the treatment of patients for autism. The reference by Wilkinson, *et al.*, is very similar to Houston but suggests that compositions containing dipeptidyl peptidase IV may be used in reducing opioid-related symptoms. In discussing routes of delivery, both references expressly state that the preferred method of drug administration is oral (see col. 9, lines 20-21 in the

Wilkinson reference, and col. 8, lines 35-36 in the Houston reference). The patents do indicate that other routes of delivery may be used and state that nasal delivery is among these. However, intranasal administration is simply listed along with a large number of other nonpreferred routes including rectal, intraarterial, intramuscular, intraperitoneal, subcutaneous, intraocular, intravenous, topical, vaginal and pulmonary delivery (see col. 8, lines 36-42 in the Houston reference, and col. 9, lines 21-29 in the Wilkinson reference). Applicants do not believe that these references, when fairly considered for what they teach as a whole, provide an incentive to deliver dipeptidyl peptidase IV intranasally. In this regard, it should also be noted that the conditions that the references suggest may be treated with preparations would not in themselves suggest any advantage in intranasal delivery. For example, there is no suggestion to treat a bronchial disease or a disease of the respiratory tract.

The Houston and Wilkinson references may also be viewed as disclosing intranasal delivery as a non-preferred option in a genus that encompasses nearly all possible methods of delivery. Therefore, the rules for assessing the obviousness of an individual species within a generic disclosure should apply. As set forth in *In re Baird*[1] and summarized in MPEP § 2144.08, in cases where the prior art only discloses an invention as part of a broad genus, the invention is not rendered obvious in the absence of teachings that would lead one of skill to select the it from the other options available in the genus. Since there are no teachings in either Houston or Wilkinson that would lead one of skill in the art to select intranasal delivery from the routes disclosed, these references cannot be used to establish a *prima facie* case of obviousness.

Finally, it is not clear from the Office Action why the Examiner concludes that, if intranasal delivery is an option, it automatically follows that pre-loading a spray device would be obvious. An incentive for making a device that can be rapidly used to deliver drug could reasonably exist in cases where rapid delivery is important, *e.g.*, in the treatment of asthma. However, conditions disclosed in the references, *i.e.*, autism and opioid-related symptoms, would not appear to fall into this category.

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[1] 16 F.3d 380 (Fed. Cir. 1994).

Conclusion

In light of the discussion above, Applicants submit that all of the Examiner's rejections have been overcome. It is therefore respectfully requested that these rejections be withdrawn and that the claims presently pending in the application be allowed.

If, in the opinion of the Examiner, a phone call may help to expedite the prosecution of this application, the Examiner is invited to call Applicants' undersigned attorney at (202) 419-7013.

Respectfully submitted,

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